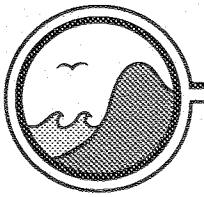
LOWER GUADALUPE RIVER FLOOD CONTROL PROJECT – POND A8W SANTA CLARA COUNTY, CALIFORNIA IDENTIFICATION OF WATERS OF THE U.S. ADDENDUM "A" TO CORPS FILE NUMBER 24897S



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April 9, 2002

Project No. 1130-02

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EXECUTIVE SUMMARY

H. T. Harvey & Associates' biologists surveyed the southwestern perimeter of Pond A8W for areas that may meet the regulatory jurisdiction of Waters of the United States (jurisdictional waters) during December 2001 and January 2002.

Potential jurisdictional waters on site totaled approximately 6.05 acres and included wetlands and other waters. The remaining area of the project site met none of the regulatory definitions of jurisdictional waters. The approximate acreages of these areas are summarized below.

Summary of Jurisdictional Waters along the Southwestern Perimeter of Pond A8W, Santa Clara County, California

Jurisdictional Waters	Acres
Section 404 and Historic Section 10 Wetlands	0.12
Section 404 Wetlands	0.59
Section 404 and Historic Section 10 Other Waters	4.96
Section 404 Other Waters	0.38
Total of Waters of the U.S.	**6.05**
Uplands	4.83
Total Project Area	10.88

INTRODUCTION

PROJECT AREA DESCRIPTION

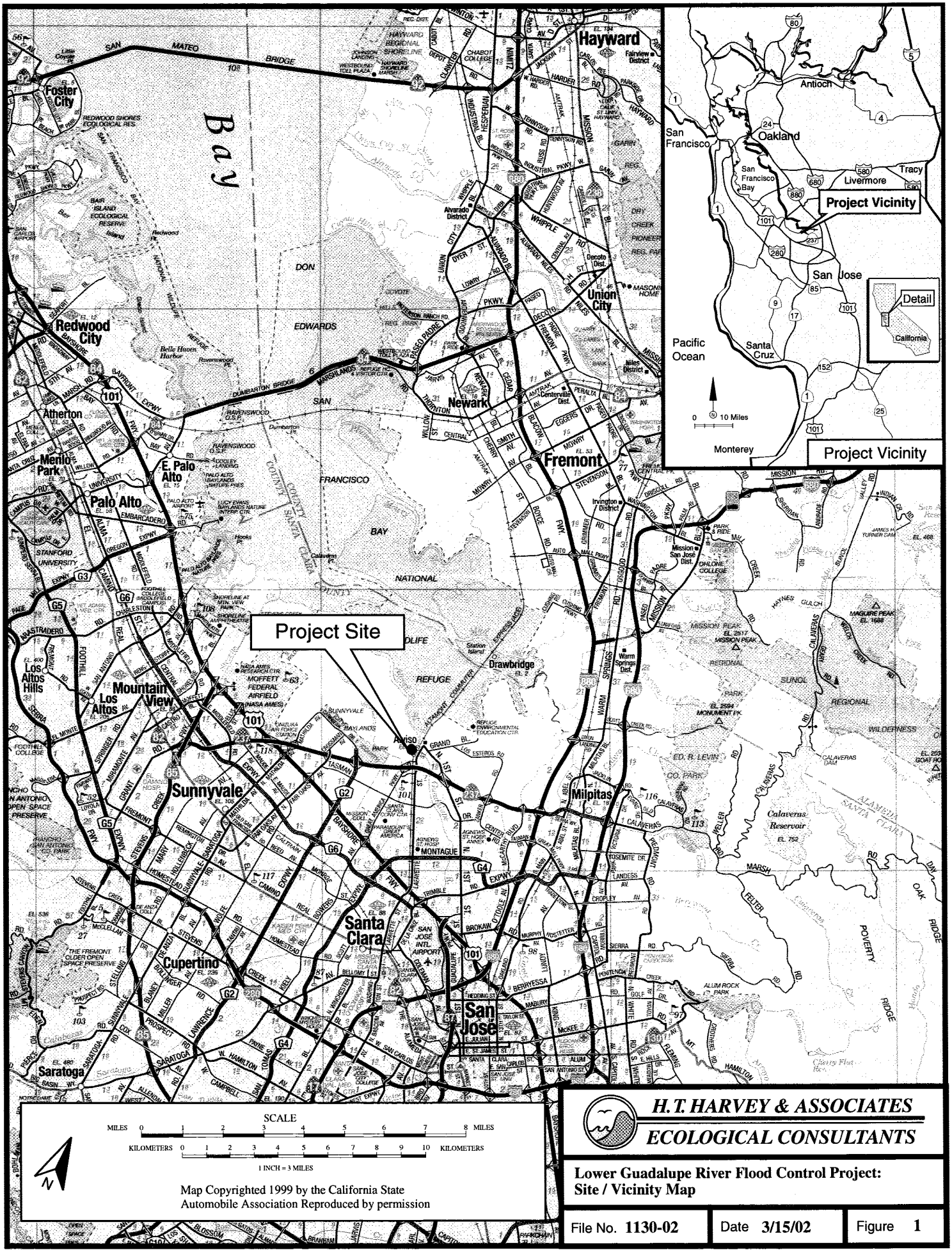
Please note that this report serves as an addendum to a 1998 delineation (Corps File Number 24897S) that was conducted along the Guadalupe River from Highway 101, downstream to the Alviso Marina (H. T. Harvey & Associates 1998). This 1998 delineation was verified by the USACE in a letter dated January 17, 2001. The most downstream reach (e.g., Reach 0) of the 1998 delineation is adjacent to the Pond A8W project site that is presented in this report.

The Lower Guadalupe River Flood Control Project - Pond A8W Project Site is located west of Alviso in the northwest corner of Santa Clara County, California (Figure 1). Pond A8W is one of more than 15 ponds utilized by Cargill for salt production. These ponds occupy areas of former baylands. Remnants of these baylands still exist along Guadalupe and Alviso Sloughs, and Coyote Creek, which meander between the salt ponds and empty into San Francisco Bay. The ponds are protected from tidal action by large levees and are separated from each other by smaller dikes. Land use in the project vicinity includes salt ponds, freshwater and brackish marsh habitats, residential and commercial developments, and large areas of bareground that are currently undergoing development.

The project site is located on the Milpitas U.S.G.S. Quadrangle Map, due west of Alviso (Figure 2). The artificially maintained water level in Pond A8W is controlled by water control structures at approximately sea level (or 0.0 feet National Geodetic Vertical Datum), but the levees forming its perimeter rise up to 20 feet above the water levels in the pond. The mean annual rainfall for this region of Santa Clara County is approximately 15 inches, and the mean annual temperature is 58° F (Soil Conservation Service; SCS 1968).

The soils of the project site include two miscellaneous land types including 'made land' and tidal marsh (Figure 3). Made land consists of variable textured soil material and refuse overlying Alviso soils on what was once Tidal Marsh Land (Soil Conservation Service; SCS 1968). Fill materials comprising areas of 'made land' may be greater than 20 feet deep where native sediments dredged from the pond itself have been deposited to construct levees. Historically, tidal marsh land occurred on site (Figure 3). This miscellaneous land type is described as being periodically covered with ocean water (SCS 1968). However, under current conditions (i.e., diked salt pond), tidal marsh land is limited to the Alviso Slough side of the levee. Tidal marsh land is listed as being an area of Hydric Soils of the United States (SCS 1992).

The U.S. Fish and Wildlife Service (USFWS) has classified wetland resources on the site under the National Wetland Inventory (NWI) system (Figure 4). Pond A8W has been classified as being an artificially flooded lacustrine littoral habitat with an unconsolidated bottom, and contains hypersaline waters that are impounded. The tidal marsh land along the length of Alviso slough is classified as regularly flooded, intertidal estuarine habitat dominated by emergent vegetation.



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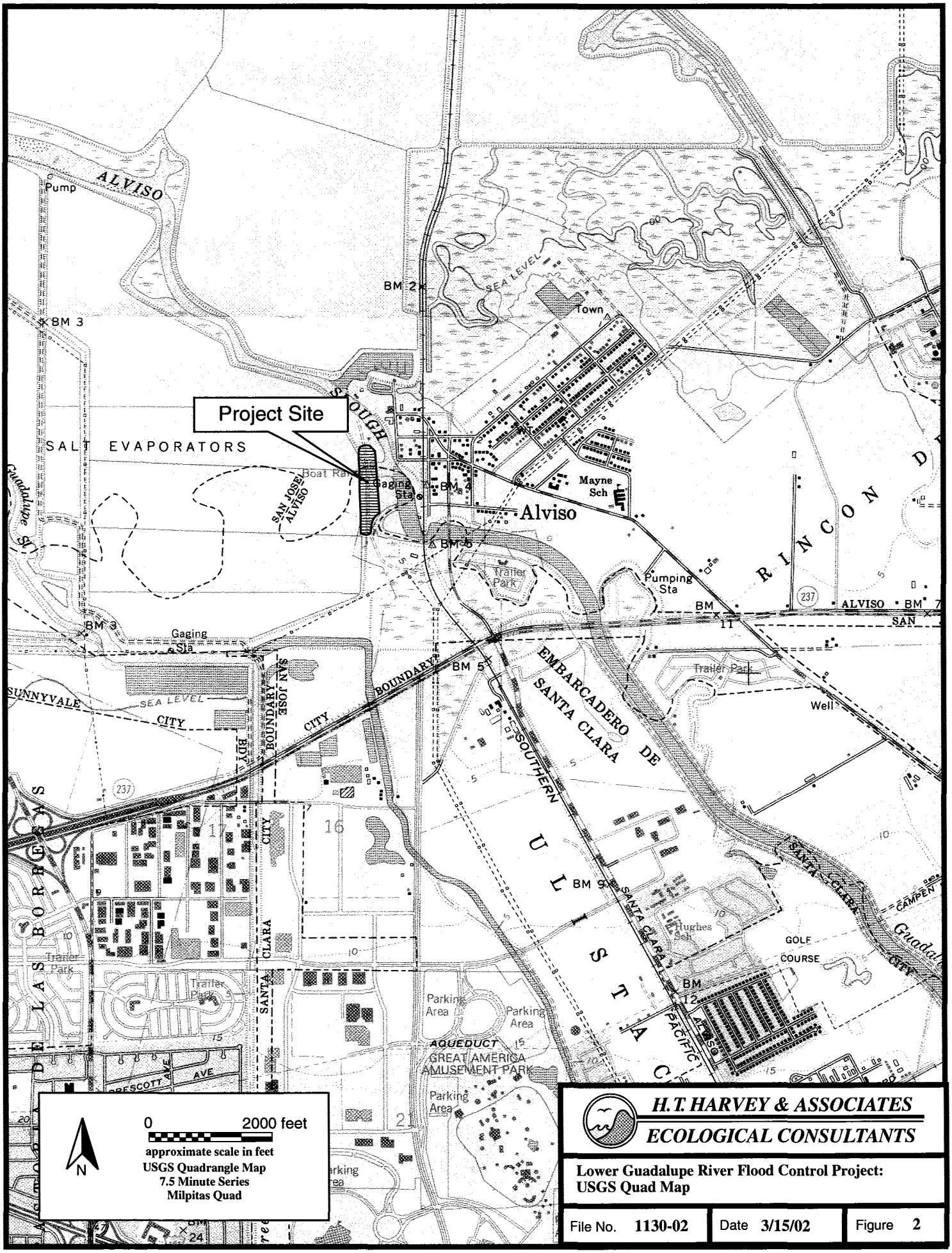
Lower Guadalupe River Flood Control Project: Site / Vicinity Map

File No. 1130-02	Date 3/15/02	Figure 1


Project Site
SALT EVAPORATORS
ALVISO
Pump
BM 2
BM 3
SEA LEVEL
Town
SLOUGH
Boat Ramp
Gaging Sta
BM 4
Alviso
Mayne Sch
BM 5
Trailer Park
Pumping Sta
RINCON D
ALVISO
BM 7
SAN
BM 11
Gaging Sta
BM 3
BOUNDARY
SAN JOSE
SUNNYVALE
CITY
SEA LEVEL
EMBARCADERO DE
SANTA CLARA
SOUTHERN
PACIFIC
Trailer Park
Well
BM 9
SANTA CLARA
Hughes Sch
GOLF
COURSE
CAMPEN
Trailer Park
Parking Area
AQUEDUCT
GREAT AMERICA
AMUSEMENT PARK
BM 12
PRESCOTT AVE
DE LAS BORREGAS
237
0
2000 feet
approximate scale in feet
USGS Quadrangle Map
7.5 Minute Series
Milpitas Quad
N
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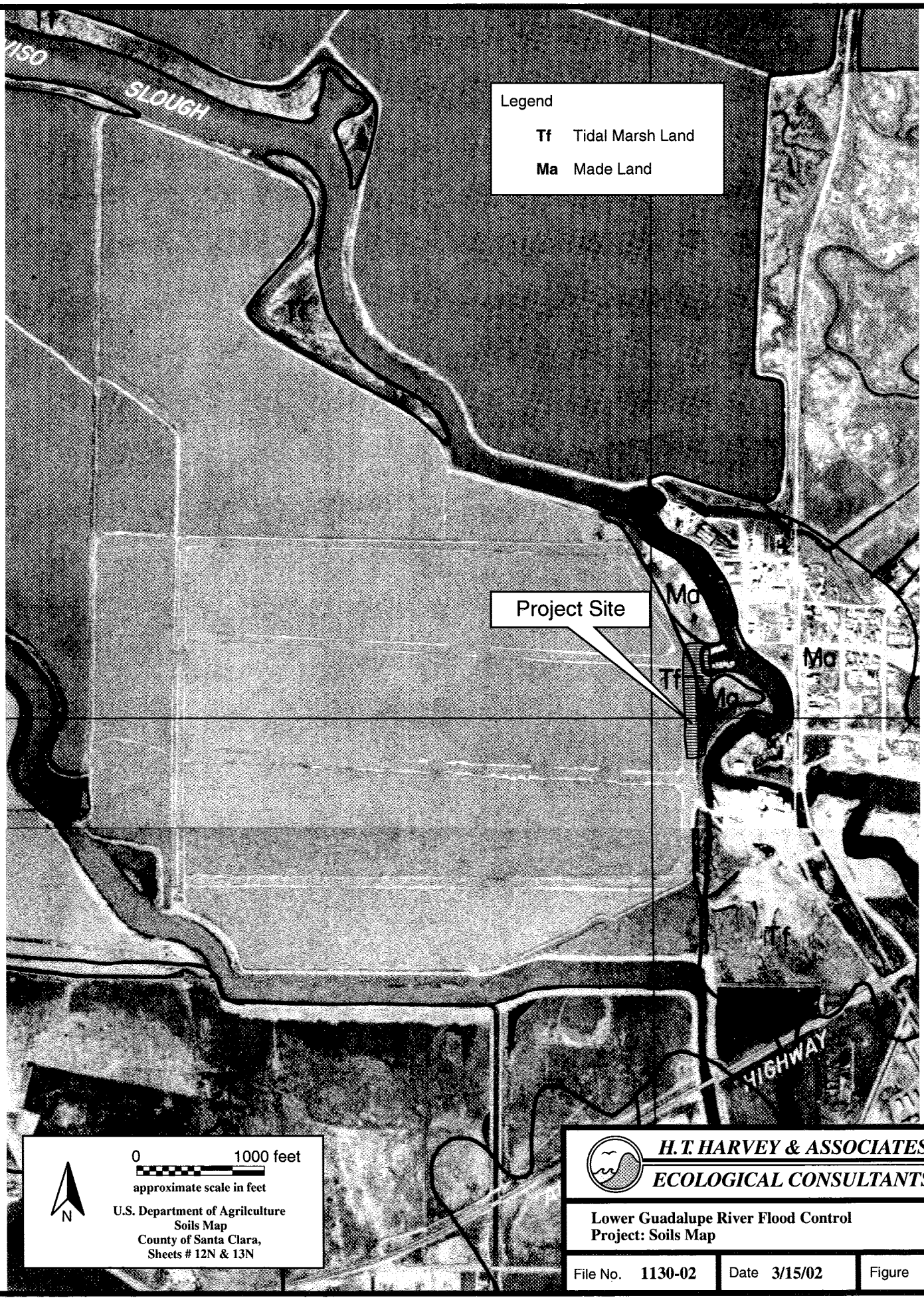
Lower Guadalupe River Flood Control Project:
USGS Quad Map
File No. 1130-02
Date 3/15/02
Figure 2



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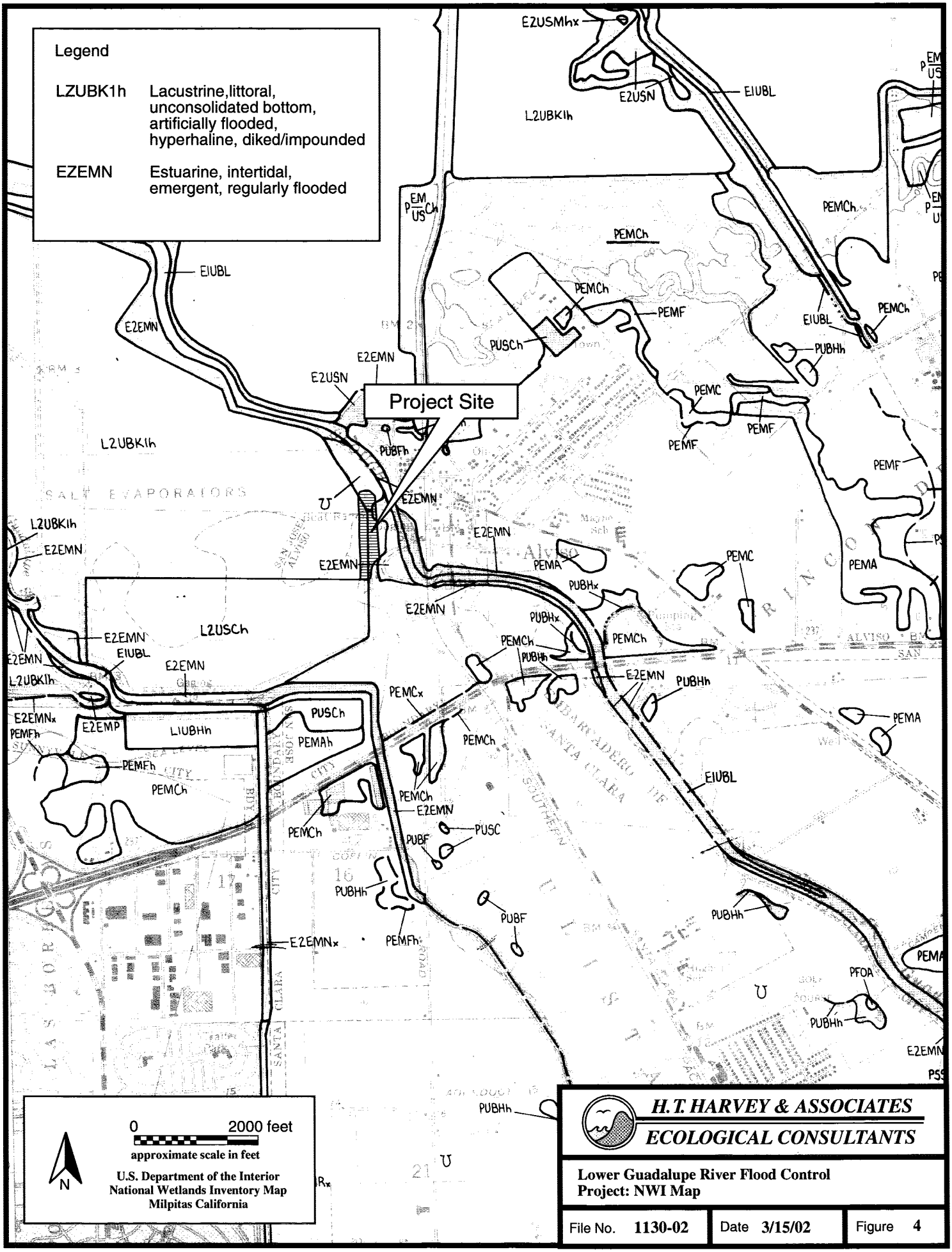
Lower Guadalupe River Flood Control Project: Soils Map

File No. 1130-02	Date 3/15/02	Figure 3

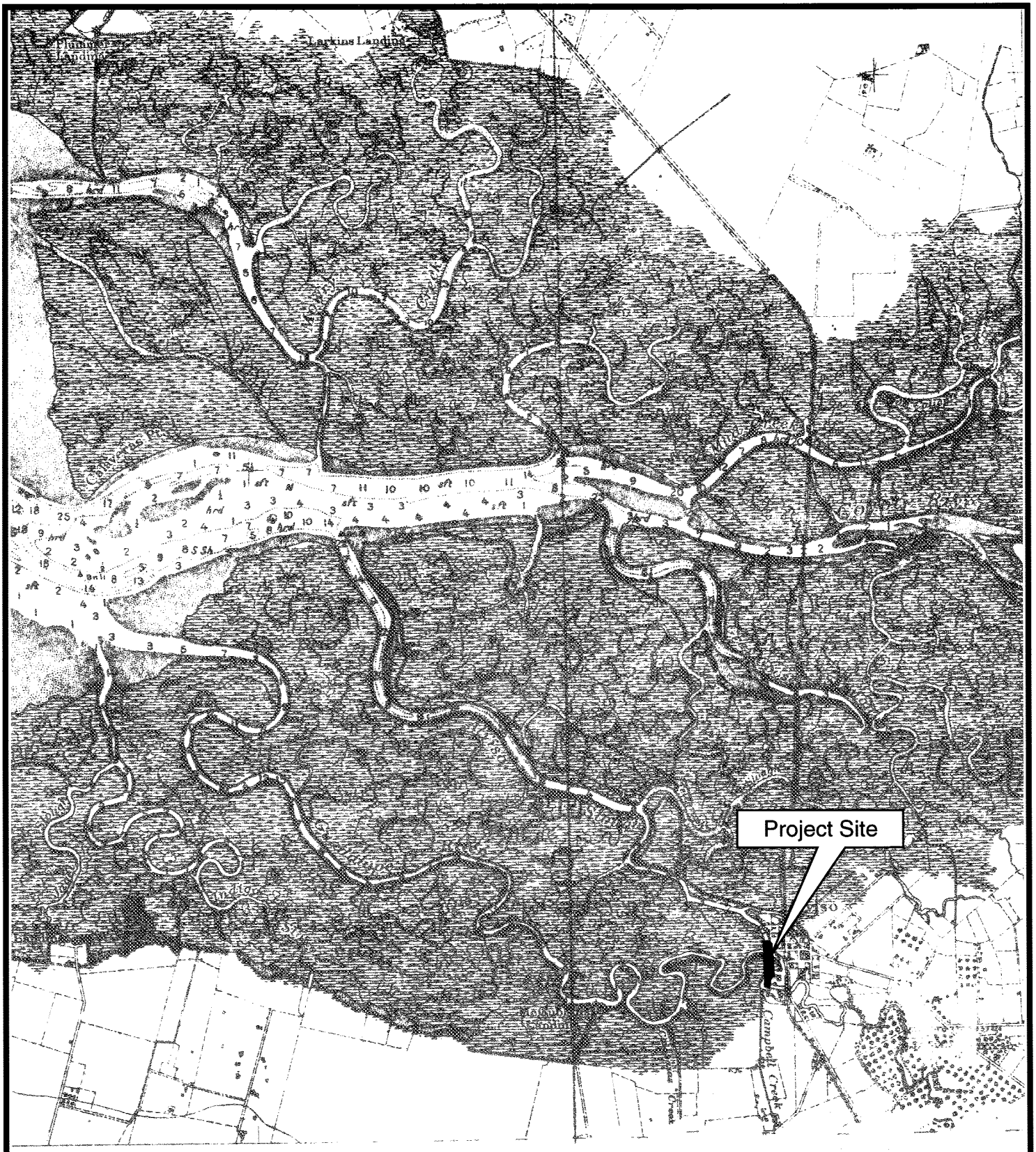

Legend
LZUBK1h Lacustrine,littoral, unconsolidated bottom, artificially flooded, hyperhaline, diked/impounded
EZEMN Estuarine, intertidal, emergent, regularly flooded
Project Site
E2USN
E1UBL
L2UBK1h
PEMCh
PEMF
PUSCh
PUBHh
PEMC
E2EMN
L2USCh
PEMA
PUBHx
PEMCx
E2EMNx
E2EMP
L1UBHh
PEMAh
PEMFh
PUBF
PUSC
PFOA
0 2000 feet
approximate scale in feet
N
U.S. Department of the Interior
National Wetlands Inventory Map
Milpitas California
H.T. HARVEY & ASSOCIATES
ECOLOGICAL CONSULTANTS
Lower Guadalupe River Flood Control
Project: NWI Map
File No. 1130-02
Date 3/15/02
Figure 4

The bed and banks of the Guadalupe River have been greatly modified during the last century for flood control and development purposes. The lowest reach of the river (Guadalupe Slough) has been disconnected from the upper reach by the development of salt evaporator ponds. The Guadalupe River was then directed into Alviso Slough, located to the northeast of the historical outflow point of the river (now called Guadalupe Slough). The area where the river flows into Alviso slough is located on land that was historically tidal salt marsh (Figure 5). This entire segment of the river has been channelized and occurs within flood control levees constructed in the mid-1960's.

SURVEY PURPOSE

H. T. Harvey & Associates biologists' surveyed all portions of the project site for areas that may meet the regulatory definition of Waters of the United States (jurisdictional waters). Development in areas identified as such is subject to the permit requirements of the U. S Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act (1972) and Section 10 of the Rivers and Harbors Act (1899). The purpose of this work was to identify the extent and location of jurisdictional waters located within the project boundaries under conditions existing at the time of the survey.

In January 2001, the USACE approved a delineation of jurisdictional waters along the lowest, northernmost reaches of the Guadalupe River. This delineation extended from Alviso Marina southward to the downstream edge of the U.S. Highway 101 bridge that spans the river in the City of San Jose. H.T. Harvey & Associates prepared the delineation report identifying waters of the U.S. and associated maps of this jurisdictional area in 1998 on behalf of the Santa Clara Valley Water District (SCVWD). The January 2001 USACE jurisdictional determination was based upon the report and upon subsequent field reviews with staff from SCVWD and H.T. Harvey & Associates. (See letter to Gale Rankin, SCVWD, file no. 24897S, received January 17, 2001.)



N

0 1 mile

U.S. Coast and Geodetic Survey 1903

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Lower Guadalupe River Flood Control Project: Historic Waters (Based on U.S. Coast and Geodetic Survey Map 1903)

File No. 1130-02	Date 3/15/02	Figure 5

SURVEY METHODS

IDENTIFICATION OF JURISDICTIONAL WATERS

H. T. Harvey & Associates' biologists surveyed the southwestern perimeter of Pond A8W for areas that meet the regulatory jurisdiction of Waters of the United States (jurisdictional waters) during December 2001 and January 2002. The eastern extent of the survey ended at the levee that separates Pond A8W from Alviso Slough. Although a portion of the project area extends east of this levee, this area has already been verified by the USACE (Corps File Number 24897S). For reference purposes, the delineation figure presented in this report includes the extent of the verified jurisdictional waters located to the east of the levee. However, the acreages in this report reflect only the current delineation effort. Survey personnel included plant ecologists Mary Bacca (M.S.) and Kurt Flaig (B.S.). A description of wetland sites was conducted using methodologies approved by the USACE.

Generally, surveys conducted on non-disturbed sites examined the vegetation, soils, and hydrology using the "Routine Determination Method, On-Site Inspection Necessary: (Section D) outlined in the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987). This multi-parameter approach to identifying wetlands is based upon the presence of hydrophytic vegetation, hydric soils and wetland hydrology.

Alternatively, upland sites (non-wetlands) which subsequently developed some characteristics of wetlands, due to intentional or incidental human activities, are examined for wetlands using the techniques described in the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) for "Atypical Situations: Man-Induced Wetlands" (Section F, Subsection 4). The majority of such wetlands involve a significant change in the hydrologic regime, which may either increase or decrease the wetness of an area.

Prior to site surveys, topographic maps and aerial photographs of the study area were obtained from several sources and reviewed. These sources included the U. S. Geological Survey Map for the Milpitas Quadrangle (photorevised 1980), the National Wetlands Inventory Map for the Milpitas Quadrangle, and aerial photographs contained in the *Soil Survey of the Santa Clara County, California* (SCS 1968).

The boundaries of jurisdictional waters located on site were mapped as onto a 1-inch : 200-foot infrared aerial photograph. These hand drawn boundaries were transferred into electronic format using the GIS software, ARC/INFO, which was used to produce final maps and to quantify acreages of jurisdictional areas.

A brief overview of the USACE regulations specifically applicable to the identification of jurisdictional waters along the southeastern perimeter of Pond A8W is summarized below.

WATERS OF THE U.S. REGULATIONS OVERVIEW

Areas meeting the regulatory definition of "Waters of the United States" are subject to the regulatory jurisdiction of the U. S. Army Corps of Engineers (USACE). The USACE, under provisions of Section 404 of the Clean Water Act (1972), has jurisdiction over "Waters of the United States" (jurisdictional waters). These waters may include all waters used, or potentially used, for interstate commerce, including all waters subject to the ebb and flow of the tide, all interstate waters, all other waters (intrastate lakes, rivers, streams, mudflats, sandflats, playa lakes, natural ponds, etc.), all impoundments of waters otherwise defined as "Waters of the U.S.," tributaries of waters otherwise defined as "Waters of the U. S.," the territorial seas, and wetlands adjacent to "Waters of the U.S." (33 CFR, Part 328, Section 328.3).

Areas not considered to be jurisdictional waters include non-tidal drainage and irrigation ditches excavated on dry land, artificially-irrigated areas, artificial lakes or ponds used for irrigation or stock watering, small artificial water bodies such as swimming pools, and water-filled depressions (33 CFR, Part 328).

Below we provide a detailed description of the methodology used in the identification of three different classes of jurisdictional waters, having the potential of occurring on site, including: A) jurisdictional wetlands; B) other waters, and; C) current Section 10 waters.

A) IDENTIFICATION OF JURIDICTIONAL WETLANDS

Surveys were conducted within the project boundaries for areas that meet the technical criteria of jurisdictional wetlands. The vegetation, soils, and hydrology of the site were examined following the guidelines outlined in the "Routine Determination Method" in the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987).

The project site was examined for topographic features, drainages, alterations to site hydrology and areas of significant recent disturbance by hiking the entire site. A determination was then made as to whether normal environmental conditions were present at the time of the field surveys. Data were used to document which portions of the site were wetlands.

Vegetation. Plants observed at each of the sample sites were identified to species using standard floras appropriate for central California, wherever necessary. Such floras included *A California Flora and Supplement* (Munz and Keck 1973), *A Flora of the Marshes of California* (Mason 1969), *Manual of the Grasses of the United States* (Hitchcock 1971), and *Weeds of California* (Robbins, et al. 1970). The wetland indicator status of each species was obtained from the 1987 Wetland Plant List, California (Reed 1988). The names of plants were generally not taken from *The Jepson Manual* (Hickman 1993), as these names are not totally consistent with scientific names used in the *1988 Wetland Plant List, California* (Reed 1988) and the *National List of Scientific Plant Names* (Smithsonian Inst. 1982). A list of species for each observation area was then compiled and an assessment of the dominant species made. It was then determined which of the observation areas supported wetland vegetation.

Wetland indicator species are so designated according to their frequency of occurrence in wetlands. For instance, a species with a presumed frequency of occurrence of 67% to 99% in wetlands is designated a facultative wetland indicator species. The wetland indicator groups, indicator symbol and the species frequency of occurrence within wetlands are as follows:

Table 1. Plant Wetland Indicator Status Categories. *

INDICATOR CATEGORY	SYMBOL	FREQUENCY OF OCCURRENCE
OBLIGATE	OBL	greater than 99%
FACULTATIVE WETLAND	FACW	67 - 99%
FACULTATIVE	FAC	34 - 66%
FACULTATIVE UPLAND	FACU	1 - 33%
UPLAND	UPL	less than 1%

*Based upon information contained in the Corps of Engineers Wetland Delineation Manual (Environmental Laboratory 1987).

Obligate and facultative wetland indicator species are hydrophytes that occur "in areas where the frequency and duration of inundation or soil saturation produce permanently or periodically saturated soils of sufficient duration to exert a controlling influence on the plant species present" (Environmental Laboratory 1987). Facultative indicator species may be considered wetland indicator species when found growing in hydric soils that experience periodic saturation. A complete list of the vascular plants of the project site, and their current indicator status has been provided in Appendix A.

Soils. Where possible, the top 22 inches of the soil profile was examined for hydric characteristics. Such characteristics include the presence of organic soils (Histosols), histic epipedons, aquic or peraquic moisture regime, presence of soil on hydric soil list, mottling indicated by the presence of gleyed or bright spots of colors (in the former case, blue grays; in the latter case, orange red, or red brown) within the soil horizons observed. Mottling of soils usually indicates poor aeration and lack of good drainage. Munsell Soil Notations (Munsell Soil Color Charts, Kollmorgen Instr. Corp. 1990) were recorded for the soil matrix for each soil sample. The last digit of the Munsell Soil Notation refers to the chroma of the sample. This notation consists of numbers beginning with 0 for neutral grays and increasing at equal intervals to a maximum of about 20. Chroma values of the soil matrix which are one (1) or less, or of two (2) or less when mottling is present, are typical of soils which have developed under anaerobic conditions.

In sandy soils, such as alluvial deposits in the bottom of drainage channels, hydric soil indicators include high organic matter content in the surface horizon and streaking of subsurface horizons by organic matter. All soil colors indicated in this report were taken under clear, sunny skies using moistened soil samples.

The *Soil Survey of the Santa Clara County, California* (SCS 1968) was consulted in order to determine which soil types have been mapped on the project site. Descriptions of soil mapping units and the list of hydric soils in Santa Clara County are included in Appendix B.

Hydrology. Each of the sample points was examined for positive field indicators of wetland hydrology. Such indicators might include visual observation of inundation and/or soil saturation, watermarks, drift lines, water-borne sediment deposits, water-stained leaves, and drainage patterns within wetlands.

B) IDENTIFICATION OF OTHER WATERS

"Other waters" include lakes, seasonal ponds and seasonal springs. Such areas are identified by the presence of standing or running water and generally lack hydrophytic vegetation.

C) IDENTIFICATION OF HISTORICAL AND CURRENT SECTION 10 WATERS

Historic maps and aerial photographs that included the project site were reviewed to determine if portions of the site occur within Section 10 waters. This information included: 1) U.S. Fish and Wildlife Service National Wetland Inventory Maps for the Milpitas USGS Quadrangles (1961; revised 1980); 2) U.S. Coast and Geodetic Survey Map (1903); and, 3) 1968 aerial photograph from the *Soils of Santa Clara County* (SCS 1968).

Current Section 10 waters occur in tidal waters and include tidal channels and adjacent special aquatic sites up to the limit of the mean high water (MHW) mark in areas currently exposed to fully tidal or muted-tidal action.

Historical Section 10 waters occur behind levees, are currently not exposed to tidal or muted-tidal influence and meet certain criteria. These criteria include: 1) the area is presently at or below MHW; 2) the area was historically at or below MHW in its "unobstructed, natural state", and; 3) there is no evidence that the area was ever above MHW (1983 memo from Calvin Fong, USACE).

Procedures for determining Historical Section 10 jurisdiction behind levees are as follows:

1. First, determine present MHW for the area in question.
    a. Use surveyed elevation data from the prospective applicant.
    b. If elevation data are not available, use the survey technique for determining MHW on the outboard side of the dike and project the MHW line back to the area in question.
    c. Those areas behind dikes that are presently above MHW are not subject to Section 10 permit requirements (providing they were above MHW prior to 28 January

1972 or were filled to above MHW thereafter under a USACE permit) because they are presently at or above MHW.

d. Those areas that are presently at or below MHW may be subject to Section 10 permit requirements. To determine whether these areas are subject to Section 10, two additional facts must be obtained (which are numbers 2 and 3 of the historical waters definition provided above).

2. The second step is to determine whether those areas presently at or below MHW were historically below MHW before the dikes were built.

   a. If available, use elevation data that were surveyed just prior to or just after the dikes were built. More often then not, this information is not available but potential sources include city and county planning commissions, public works departments, Caltrans, State Lands Commission, etc.

   b. If historic elevation data are not available, use the T-charts of 1850-90 t determine the location of the historic sloughs, if any, in those areas that are presently below MHW. The premise is that the historic sloughs were subject to the ebb and flow of the tides, and thus were below MHW.

   c. Those areas presently below MHW and historically below MHW as determined by elevation data or T-charts would be considered at or below MHW historically.

Areas that were historically below MHW and filled above MHW (as shown by reliable data) but due to subsidence are now below MHW are not subject to Section 10 authority, but may be subject to Section 404 jurisdiction.

SURVEY RESULTS

Jurisdictional waters subject to provisions of Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act were identified within the project boundaries (Figure 6). Approximately 6.05 acres of jurisdictional waters (other waters and wetlands) were identified within the project area. The remainder of the project site did not meet the regulatory definitions of jurisdictional waters; these areas are characterized by bare ground and ruderal habitat dominated by ruderal halophytes. Table 2 summarizes the total amount of jurisdictional waters on-site.

Table 2. Summary of Jurisdictional Waters along the Southwestern Perimeter of Pond A8W, Santa Clara County, California

Jurisdictional Waters	Acres
Section 404 and Historic Section 10 Wetlands	0.12
Section 404 Wetlands	0.59
Section 404 and Historic Section 10 Other Waters	4.96
Section 404 Other Waters	0.38
Total of Waters of the U.S.	**6.05**
Uplands	4.83
Total Project Area	10.88

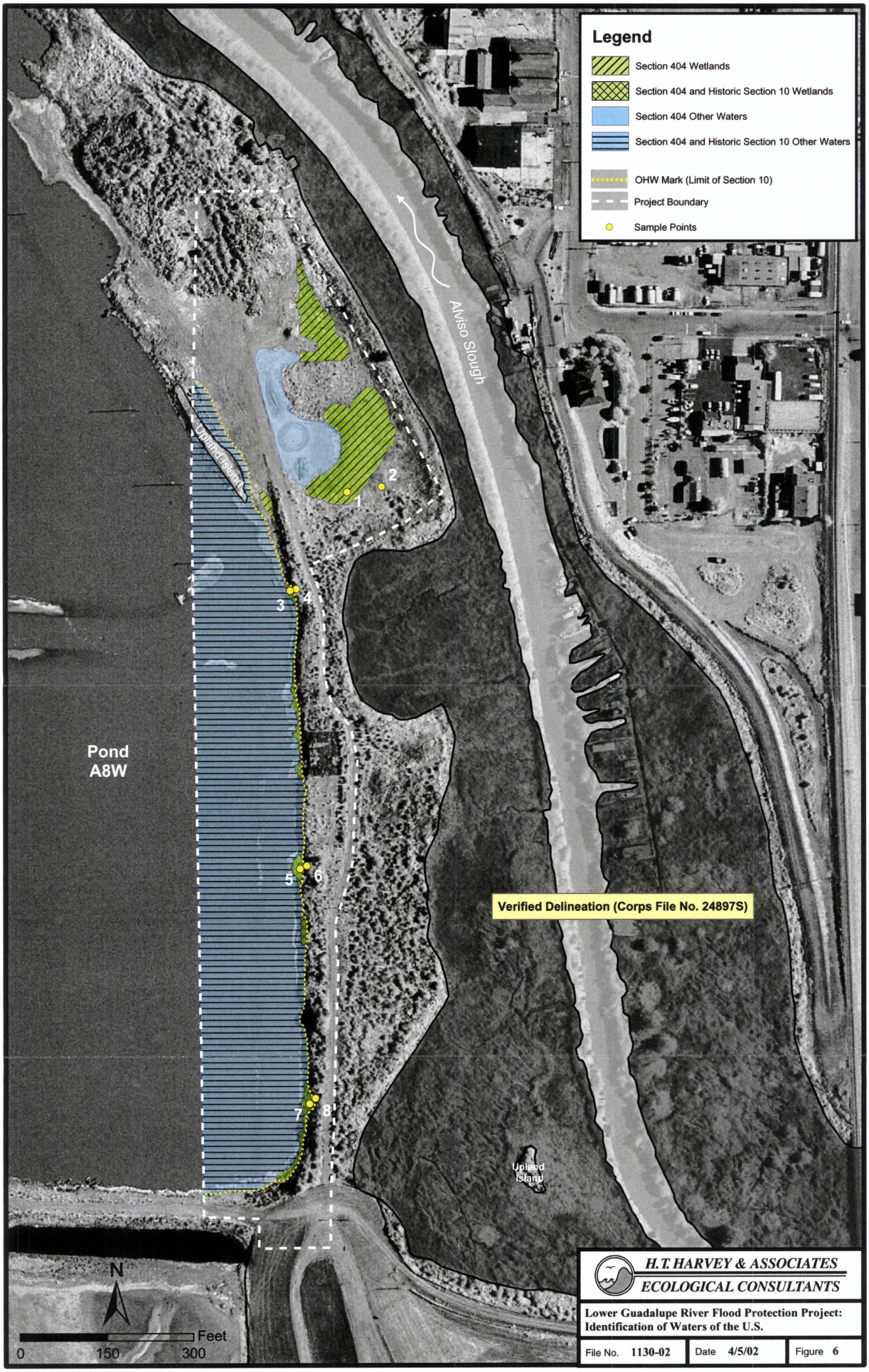
Information pertinent to the identification of jurisdictional waters assembled during the investigations is presented in four appendices attached to the rear of this report.

- Appendix A - Plant List
- Appendix B - Soil Descriptions
- Appendix C - USACE Data Forms
- Appendix D - Color Photographs

OBSERVATIONS / RATIONALE / APPROACH / ASSUMPTIONS

- The routine on-site determination assumed normal circumstances and is based upon existing conditions at the time of the surveys. The surveys occurred in December 2001 and January 2002 in which rainfall amounts were above normal.

- The northern portion of the project site has had dredged/fill material deposited over the decades. Historically, this area was maintained to accommodate the Alviso marina, as evidenced in historic aerial photos (Figure 3). This area was subsequently used for boat



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Lower Guadalupe River Flood Protection Project: Identification of Waters of the U.S.

File No. 1130-02	Date 4/5/02	Figure 6

launch activities, dwellings, and more recently as a dump for construction materials (Photograph 1; Appendix D).

Section 404 Waters: The overlapping areas need to be shown on both Fig. 6 & Sheets 1 & 2. Can't place them from looking at these 0

- A portion of the potential Section 404 waters presented in this report, were also included in the 1998 delineation report. It was decided to resurvey the small portion that is shared by both reports since the overall extent of potential jurisdictional waters appears to have changed. For reference purposes, the 1998 delineation that covers this area (e.g. Sheets 1 and 2 of Reach 0) is included in Appendix E.

- A broad depression located within the northern portion of the project site is subject to long-term ponding (Photographs 1 and 2; Appendix D). This ponding is likely a result of both rainwater accumulation and flooding from the adjacent salt pond. This depression is above the MHW mark along Alviso Slough located east of the levee and therefore, it does not occur within historic Section 10 jurisdiction. This area is labeled as a potential Section 404 other water in Figure ~~5~~ 6

which method used to do this? Elevational data or eyeball?

- ~~An~~ This isolated, dense stand of common pickleweed (*Salicornia virginica*; OBL) ~~is~~ are located along the eastern edge of the potential Section 404 other water (Photograph 1; Appendix D). Indicators of hydric soils and wetland hydrology were also observed (Sample Point 1; Appendix C). Therefore, this common pickleweed stand is identified as a potential Section 404 wetland in Figure 5.

Section 404 and Historic Section 10 Waters:

- The levee separating Alviso Slough from Pond A8W has a relatively steep bank that is shored up with substantial amounts of concrete debris (Photograph 3; Appendix D). Located along the toe of this levee are scattered, narrow bands of common pickleweed that are directly supported by the water from Pond A8W (Photographs 4 and 5; Appendix D). Therefore, an aquic moisture regime was assumed. These stands of common picklweed are located behind a levee and presently occur at or below MHW as determined by projecting the MHW mark along Alviso Slough back to the area in question. Based upon review of historical sources, these areas historically occurred below MHW as well (Figure 5). Therefore, these stands of common pickleweed are considered to be potential, historic Section 10 wetlands. - Show project site on the same as figure 5-4 is a borderline area, need to justify

eyeball?

- Hydric soil indicators (i.e. mottling, gleyed conditions) were observed at most of the sample points within these common pickleweed wetlands along the salt pond (Sample Points 3 and 5; Appendix C). At one location (Sample Point 7; Appendix C), the soils were too coarse-textured to observed reducing conditions; however an aquic moisture regime was assumed due to the wetland's proximity to the water's edge.

- These common pickleweed dominated stands along the toe of the levee were also regarded as potential Section 404 wetlands since they meet the three technical criteria used to determine jurisdictional wetlands.

- The proposed project footprint extends into the open waters of Pond A8W. An ordinary high water mark was observed in the form of a slight shelving along the banks of the pond (Photograph 6; Appendix D). This pond is not currently subject to tidal or muted-tidal conditions, therefore, the term MHW is not applicable. The elevation of this ordinary high water mark is somewhat artificial since the water levels in the pond are controlled by Cargill. Nonetheless, this pond is considered to be at the historic elevation of the former tidal marshes and is therefore a potential, historic Section 10 other water. This pond is also a potential Section 404 other water.

Upland Areas:

- Many areas described as uplands supported a scattering of common pickleweed (Photograph 7; Appendix D). The presence of the common pickleweed is due to the relatively high salinity of these disturbed soils. These areas also tended to be dominated by variably hydrophytic and halophytic ruderal plant species. These include bristly ox-tongue (*Picris echioides*; FAC), Mediterranean barley (*Hordeum geniculatum*; FAC), broad-leaf peppergrass (*Lepidium latifolium*; FACW), and annual rabbitsfoot grass (*Polypogon monspeliensis*; FACW+). A great deal of fill was evident such as pieces of concrete, wood, glass and rebar. Due to the highly disturbed nature of the soils, hydric indicators were not observed. These areas tended to occur at higher elevations then the surrounding jurisdictional waters and did not appear to support wetland hydrology under normal tide and/or rain events. Therefore, due to the lack of wetland hydrology and hydric soils, these areas were not considered to be jurisdictional wetlands.

- Common pickleweed was also observed to be established along the upper slopes of the levees in the project vicinity, oftentimes 10 feet or more above an area of saturation or inundation. These upper common pickleweed areas were not regarded as meeting the technical definition of jurisdictional wetlands due to the lack of hydric soils and wetland hydrology as well as a predominance of ruderal halophytes. The presence of the common pickleweed is likely due to the relatively high salt content of the fill soils comprising the levees.

AREAS MEETING THE REGULATORY DEFINITION OF JURISDICTIONAL WATERS

A) Identification of Jurisdictional Wetlands (Special Aquatic Sites)

Jurisdictional wetlands located within the project site are shown in Figure 6. Section 404 wetlands total approximately 0.59 acres. Section 404 and historic Section 10 wetlands total approximately 0.12 acres. Wetlands were observed in 3 two specific locations including 2 an

isolated, depressional area (Sample Point 1; Appendix D) in the northern portion of the site and along the perimeter of Pond A8W (Sample Points 3, 5, and 7; Appendix D).

Vegetation. Both the depressional area and salt pond perimeter wetlands are dominated exclusively by common pickleweed. This species was also observed to creep into uplands among ruderal hydrophytes as described, yet hydrologic and soil criteria were usually lacking in these areas.

Hydrology. Wetland hydrology characteristics observed included saturation, inundation, drift lines, sediment deposition and oxidized root channels.

Soils. Hydric soil characteristics observed included low chromas (10YR 3/1, 2.5Y 4/1 and 2.5Y 4/3), mottling (7.5YR 3/4 and 10YR 4/4) and gleyed conditions (3/10Y). An aquic moisture regime was assumed to be present at Sample Point 1 due to the low elevation of the area, the predominance of common pickleweed and the adjacent large ponded area (Section 404 other water). An aquic moisture regime was directly observed at the remaining sample points located within wetlands.

B) Identification of "Other Waters"

Approximately 5.34 acres of other waters occur within the project limits. This includes approximately 4.96 acres of Section 404 and historic Section 10 other waters within Pond A8W and approximately 0.38 acres of Section 404 other waters located in the northern portion of the site.

C) Identification of Historic Section 10 Waters

A total of approximately 0.12 acres of wetlands and 4.96 acres of other waters are subject to historic Section 10 jurisdiction.

AREAS NOT MEETING THE REGULATORY DEFINITION OF JURISDICTIONAL WATERS

The remainder of the project site (4.83 acres) does not meet the regulatory definition of jurisdictional waters. These areas are dominated by ruderal species often referred to as peripheral halophytes, which typically occur above the wetter areas within baylands. In addition to the ruderal hydrophytes mentioned above, other locally abundant ruderal species in upland areas included fennel (*Foeniculum vulgare*), mustards (*Brassica* spp.), and bromes (*Bromus* spp.). Though some mottling was observed in the soils of these upland areas, they were not regarded as having developed in place due to their origin as fill or dredged material. No other hydric soil indicators were observed in these areas. Finally, the levee tops and other fill areas were sufficiently above the level of the pond and adjacent saturated areas, to exclude the presence of hydrologic indicators.

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APPENDIX A.

PLANTS OBSERVED ON THE LOWER GUADALUPE RIVER FLOOD CONTROL PROJECT POND A8W

Appendix A. Plants Observed on the Lower Guadalupe River Flood Control Project, Pond A8W, Santa Clara County, California.

FAMILY NAME	SCIENTIFIC NAME	COMMON NAME	INDICATOR STATUS
Anacardeaceae	*Schinus molle*	pepper tree	NOL
Apiaceae	*Foeniculum vulgare*	sweet fennel	FACU
Asteraceae	*Baccharis pilularis*	coyote brush	NOL
	Carduus pynocephalus	Italian thistle	NOL
	Grindelia humilis	marsh tarweed	FACW
	Picris echioides	bristly ox-tongue	FAC
Brassicaceae	*Brassica nigra*	black mustard	NOL
	Lepidium latifolium	peppergrass	FACW
Chenopodiaceae	*Salicornia virginica*	common pickleweed	OBL
Malvaceae	*Malva* sp.	mallow	---
Poaceae	*Bromus diandrus*	rip-gut	NOL
	Bromus mollis	soft brome	FACU-
	Cynodon dactylon	Bermuda grass	FAC
	Hordeum geniculatum	Mediterranean barley	FAC
	Piptatherum miliaceum	smilo grass	NOL
	Polypogon monspeliensis	rabbitfoot grass	FACW+
Tropaeolaceae	*Tropaeolum* sp.	nasturtium	NOL

The species are arranged alphabetically by family name for all vascular plants encountered during the plant survey. Plants are also listed alphabetically within each family. In some cases it was not possible to accurately identify a particular plant to the species level due to the absence of specific anatomic structures required for identification.
NOL = Not on List

APPENDIX B.

SOILS OF THE
LOWER GUADALUPE RIVER FLOOD CONTROL PROJECT
POND A8W

SOILS OF SANTA CLARA COUNTY

OUR SOIL-OUR STRENGTH
U.S. SOIL CONSERVATION SERVICE

COUNTY OF SANTA CLARA CALIFORNIA

CONSERVATION DISTRICTS OF AMERICA

Prepared by the United States Department of Agriculture, Soil Conserv
Service, in cooperation with and for the County of Santa Clara Pla
Department, the Santa Clara County Flood Control and Water District, a
Black Mountain, Evergreen, and Loma Prieta Soil Conservation Di

Surface soil color may be dark grayish brown or very dark grayish brown. The surface is usually granular structure in the top few inches. Reaction is slightly to medium acid. Texture will average over 35 percent clay. About 5 to 10 percent of the surface is covered by stones and rock outcrop. Depth to bedrock will average about 10 inches, but will range from 6 to 19 inches.

Included in mapping this soil are areas of Inks rocky clay loam, 15 percent; and small areas of Rock land.

This well drained soil holds about 1 to 2 inches of water for plant use. Fertility is low, because of the shallow soil depth. Permeability is slow. Runoff is rapid and the erosion hazard is high.

This soil is used for dryland pasture and range. Capability unit VIs7 (15); pasture and range site Shallow Loamy.

MADE LAND (Ma)

This miscellaneous land type consists of variable textured soil material and refuse over Alviso soils on Tidal marsh land. Thickness is variable, but fill material may be 4 to 20 feet thick. Because sea water has seeped into these areas, most of the material is strongly affected by salts. This land type is mostly level and occurs northwest of Milpitas at Alviso, north of Mountain View and at the Palo Alto Yacht Harbor.

This land type is used for wildlife and recreation. It has no agricultural value. Capability unit VIIIw6 (14).

MADONNA SERIES

The Madonna series consists of well drained, medium textured soils underlain by strongly acid sedimentary bedrock, at an average depth of 25 inches. These soils formed on moderately sloping to very steep uplands. Vegetation is mostly oak trees, some brush, grasses and forbs. Elevations range from 1,500 to 3,500 feet. Mean annual rainfall is 35 to 50 inches; mean annual air temperature is about 55 to 56° F. The growing season is about 200 to 250 days. Maymen, Ben Lomond and Los Gatos are the principal associated soils.

The surface soil ranges from 2 to 10 inches in thickness and is a pale brown, medium acid loam. The subsoil is a brown, medium acid loam, ranging in thickness from 12 to 18 inches. The substratum is strongly acid, moderately hard coarse grained sandstone.

Madonna soils are used for dryland orchards, hay, pasture, range, Christmas trees, recreation and watershed.

Madonna loam, 30 to 50 percent slopes (MbF). This soil occupies steep uplands with slopes averaging about 35 percent.

this soil has black clay buried surface horizons at an average depth of 2 to 3 feet.

This soil is used for irrigated row crops and pasture. Drainage, irrigation management and flood control are the main management problems. Capability unit IIIw5 (14).

TERRACE ESCARPMENTS

Terrace escarpments (TeF). This miscellaneous land type consists of steep old terraces, usually with slopes of 30 to 50 percent. Keefers, Pleasanton and Hillgate are the principal associated soils. These areas have not developed distinct soil horizons but are generally gravelly loam or clay loam textured material. Runoff is rapid. Erosion hazard is high. Vegetation is mostly annual grasses, forbs and scattered oaks.

This land type is used for limited range, wildlife and watershed. Capability unit VIIe1 (15); pasture and range site Loamy, steep phase.

TIDAL MARSH

Tidal marsh (Tf). This miscellaneous land type consists of land that is periodically covered by ocean water. Vegetation is a rank growth of cordgrass and pickleweed. Numerous sloughs meander through out this land.

This land type is used for wildlife and recreation. Large areas have been ponded and used for evaporating sea water for the production of salt. Capability unit VIIIw6 (14).

VALLECITOS SERIES

The Vallecitos series consists of well drained soils having fine textured subsoils underlain by sedimentary and metasedimentary bedrock, at depths of about 19 inches. They formed on moderately steep to very steep uplands. Vegetation is annual grasses, forbs and oak trees. Elevations range from 300 to 3,500 feet. Mean annual rainfall is about 16 to 25 inches; mean annual air temperature is about 58 to 60° F. The growing season is about 200 to 250 days. Gaviota and Los Gatos are the principal associated soils.

The surface soil averages 5 to 10 inches in thickness and is a brown slightly and medium acid loam. The subsoil is dark brown and reddish brown, medium acid clay loam and clay, averaging 8 to 20 inches in thickness. The substratum is metamorphosed shale.

Vallecitos soils are used for dryland pasture, range, wildlife, recreation and watershed.

Hydric Soils in Santa Clara Area

Map Symbol	Soil Name	Hydric Component	Location Notes
AcF	Altamont clay, 30 to 50 percent slopes		
AcE	Altamont clay, 15 to 30 percent slopes		
AcE2	Altamont clay, 15 to 30 percent slopes, eroded		
AcG2	Altamont clay, 50 to 75 percent slopes, eroded		
An	Alviso clay	Alviso (CA0141)	
ArA	Arbuckle gravelly loam, 0 t0 2 percent slopes		
AkC	Arbuckle loam, deep, 5 to 9 percent slopes		
AsE	Ayar clay, 15 to 30 percent slopes		
AsD	Ayar clay, 9 to 15 percent slopes		
AsF	Ayar clay, 30 to 50 percent slopes		
AuG	Azule clay loam, 30 to 75 percent slopes		
AuG2	Azule clay loam, 30 to 75 percent slopes, eroded		

Hydric Soils in Santa Clara Area

Map Symbol	Soil Name	Hydric Component	Location Notes
AvD2	Azule silty clay loam, 9 to 15 percent slopes, eroded		
AvE	Azule silty clay loam, 15 to 30 percent slopes		
AvE2	Azule silty clay loam, 15 to 30 percent slopes, eroded		
Ba	Bayshore clay loam	Bayshore (CA1337)	
BeG	Ben Lomond fine sandy loam, 50 to 75 percent slopes		
Ca	Campbell silty loam	Clear Lake (CA0013)	low alluvial plains
Cd	Campbell silty clay	Clear Lake (CA0013)	low alluvial plains
Cc	Campbell silty clay loam, clay substratum	Cambell (CA1356)	
Ce	Cambell silty clay, muck substratum	Cambell (CA1356)	
Cf	Castro clay		
Ch	Clear Lake clay drained	Cambell (CA1356) Sunnyvale (CA1381)	low bottoms alluvial plains
Cg	Clear Lake clay	Clear Lake (CA0013)	
Ck	Clear Lake clay saline	Clear Lake (CA1522)	

Hydric Soils in Santa Clara Area

Map Symbol	Soil Name	Hydric Component	Location Notes
CmE	Climara stony clay, 15 to 50 percent slopes		
CnD	Climara clay, 9 to 30 percent slopes		
CoB	Cortina very gravelly loam, 0 to 5 percent slopes	River wash	drainage ways
CrA	Cropley clay, 0 to 2 percent slopes	Clear Lake (CA0013)	Depressions
CrC	Cropley clay, 2 to 9 percent slopes		
CsA	Cropley clay loam 0 to 2 percent slopes	Cambell (CA1356)	
DaD	Diablo clay, 9 to 15 percent slopes		
DaE	Diablo clay, 15 to 30 percent slopes		
DaE2	Diablo clay, 15 to 30 percent eroded		
DaF	Diablo clay, 30 to 50 percent slopes		
EsA	Esparto loam, 0 to 2 percent slopes		
EsC	Esparto loam, 2 to 9 percent slopes		

Hydric Soils in Santa Clara Area

Map Symbol	Soil Name	Hydric Component	Location Notes
FaG	Felton silt loam, 50 to 75 percent slopes		
FaE	Felton silt loam, 15 to 30 percent slopes		
FaF	Felton silt loam, 30 to 50 percent slopes		
FbG	Felton-Ben Lomond complex, 50 to 75 percent slopes		
GaA	Garretson loam, gravel substratum 0 to 2 percent slopes		
GbB	Garretson gravelly loam, 0 to 5 percent slopes		
GpA	Garretson fine sany loam, 0 to 2 percent slopes		
GcG	Gaviota loam, 30 to 75 percent slopes		
GcD2	Gaviota loam, 5 to 15 percent slopes, eroded		
GcE	Gaviota loam, 15 to 30 percent slopes		
GkE2	Gaviota rocky loam 5 to 30 percent slopes, eroded		

Hydric Soils in Santa Clara Area

Map Symbol	Soil Name	Hydric Component	Location Notes
GhG2	Gaviota gravelly loam, 30 to 75 percent slopes, eroded		
GhG3	Gaviota gravelly 30 to 75 percent slopes, serverly eroded		
GmE	Gaviota-Los Gates complex, 15 to 30 percent slopes		
GmF	Gaviota-Los Gates complex, 30 to 50 percent slopes		
GoF	Gilroy clay loam, 30 to 50 percent slopes		
GoD	Gilroy clay loam, 5 to 30 percent slopes		
GoE2	Gilroy clay loam, 15 to 30 percent slopes, eroded		
GoG	Gilroy clay loam, 50 to 75 percent slopes		
HeG3	Henneke rocky clay loam, 30 to 75 percent slopes, severely eroded		
HfD2	Hillgate silt loam, 9 to 15 percent slopes, eroded		

Hydric Soils in Santa Clara Area

Map Symbol	Soil Name	Hydric Component	Location Notes
HfC	Hillgate silt loam, 2 to 9 percent slopes		
HfE2	Hillgate silt loam, 15 to 30 percent slopes, eroded		
HfF2	Hillgate stilt loam, 30 to 50 percent slopes, eroded		
InG2	Inks rocky clay loam, 50 to 75 percent slopes, eroded		
IsG3	Inks stony clay loam, 30 to 75 percent slopes, severly eroded		
KeC2	Keefers clay loam 2 to 9 percent slopes, eroded	Un-named soils	seep and marsh areas
KeA	Keefers clay loam, 0 to 2 percent slopes	Un-named soils	seep and marsh areas
KfB	Kitchen middens		
LaF	Lanslides		
LfG	Los Gatos gravelly loam, 50 to 75 percent slopes		
LfE2	Los Gatos gravelly loam, 15 to 30 percent slopes, eroded		

Hydric Soils in Santa Clara Area

Map Symbol	Soil Name	Hydric Component	Location Notes
LfF	Los Gatos gravelly loam, 30 to 50 percent slopes		
LgE	Los Gatos clay loam, 15 to 30 percent slopes		
LgE2	Los Gatos clay loam, 15 to 30 percent slopes, eroded		
LhG	Los Gatos-Gaviota complex, 50 to 75 percent slopes		
LkG3	Los Gatos and Maymen soils, 50 to 75 percent slopes, severely eroded		
LoE	Los Osos clay loam, 15 to 30 percent slopes		
LoF	Los Osos clay loam 30 to 50 percent slopes		
LoG	Los Osos clay loam, 50 to 75 percent slopes		
LrA	Los Robles clay loam, 0 to 2 percent slopes		
LrC	Los Robles clay loam, 2 to 9 percent slopes		
LtD	Los Trancos stony clay, 15 to 30 percent slopes		

Hydric Soils in Santa Clara Area

Map Symbol	Soil Name	Hydric Component	Location Notes
Ma	Made land		
MbF	Madonna loam, 30 to 50 percent slopes		
MbE	Madonna loam, 15 to 30 percent slopes		
MbE2	Madonna loam, 5 to 30 percent slopes, eroded		
MbG	Madonna loam, 50 to 75 percent slopes		
McB	Maxwell clay, 0 to 5 percent slopes		
MfG2	Maymen rocky fine sandy loam, 50 to 75 percent slopes, eroded		
MeF2	Maymen fine sandy loam, 15 to 50 percent slopes, eroded		
Mg	Mocho loam		
Mh	Mocho clay loam		
Mk	Mocho soils, undifferentiated		
MwF2	Montara rocky clay loam, 15 to 50 percent slopes, eroded		
MxF3	Montara stony clay loam, 30 to 50 percent slopes, severely eroded		

Hydric Soils in Santa Clara Area

Map Symbol	Soil Name	Hydric Component	Location Notes
MyE	Montara-Climara complex, 15 to 30 percent slopes		
Og	Orestimba silty clay loam	Orestimba	
Of	Orestimba clay loam	Orestimba	
Pd	Pacheco clay loam	Clear Lake (CA0013)	low alluvial plains
Pa	Pacheco fine sandy loam	Clear Lake (CA0013)	low alluvial plains
Pb	Pacheco silt loam, drained		
Pe	Pacheco clay loam, gravelly substratum	Pacheco (CA0048)	
Pf	Pacheco loams, clay substratum	Pacheco	small areas with high water tables
PgE	Parrish gravelly clay loam, 9 to 30 percent slopes		
PgF	Parrish gravelly clay loam, 30 to 50 percent slopes		
PgG	Parrish gravelly clay loam, 50 to 75 percent slopes		
Pg3	Permanente stony loam, 50 75 percent slopes, severely eroded		

Hydric Soils in Santa Clara Area

Map Symbol	Soil Name	Hydric Component	Location Notes
PkG	Pits		
PoA	Pleasanton loam, 0 to 2 percent slopes		
PoC	Pleasanton loam, 2 to 9 percent slopes		
PpA	Pleasanton gravelly loam, 0 to 2 percent slopes		
PpC	Pleasanton gravelly loam, 2 to 9 percent slopes		
PpD2	Pleasanton gravelly loam, 9 to 15 percent slopes, eroded		
PpE2	Pleasanton gravelly loam, 15 to 30 percent slopes, eroded		
PrD	Positas-Saratoga loams, 9 to 15 percent slopes		
PrC	Positas-Saratoga loams, 2 to 9 percent slopes		
RaA	Rincon clay loam, 0 to 2 percent slopes		

Hydric Soils in Santa Clara Area

Map Symbol	Soil Name	Hydric Component	Location Notes
Rg	Riverwash	Riverwash	
RnG	Rock land		
SaG2	San Andreas fine sandy loam, 30 to 75 percent slopes, eroded		
SaE2	San Andreas fine sandy loam, 15 to 30 percent slopes, eroded		
SbG	San Benito clay loam, 50 to 75 percent slopes		
SbE2	San Benito clay loam, 15 to 30 percent slopes, eroded		
SbF	San Benito clay loam, 30 to 50 percent slopes		
SbF3	San Benito clay loam, 30 to 50 percent slopes, severely eroded		
ScG	Santa Lucia shaly loam, 50 to 75 percent slopes		
ScF2	Santa Lucia shaly loam, 30 to 50 percent slopes, eroded		
SdA	San Ysidro loam, 0 to 2 percent slopes	San Ysidro	Areas subjected to ponding
SdB2	San Ysidro loam, 2 to 9 percent slopes, eroded		

Hydric Soils in Santa Clara Area

Map Symbol	Soil Name	Hydric Component	Location Notes
SdD	San Ysidro loam, 9 to 15 percent slopes		
SeA	San Ysidro clay, overwash, 0 to 2 percent slopes		
SfA	San Ysidro loam, acid variant, 0 to 2 percent slopes		
SfC	San Ysidro loam, acid variant, 2 to 9 percent slopes		
SgC	Saratoga-Positas loams, 2 to 9 percent slopes		
SgD	Saratoga-Positas loams, 9 to 15 percent slopes		
SgE	Saratoga-Positas loams, 15 to 30 percent slopes		
ShE2	Soper gravelly loam, 15 to 30 percent slopes, eroded		
ShF	Soper gravelly loam, 30 to 50 percent slopes		
Sv	Sunnyvale silty clay, drained	Clear Lake (CA0013)	low alluvial plains
Su	Sunnyvale silty clay	Sunnyvale (CA1381)	

Hydric Soils in Santa Clara Area

Map Symbol	Soil Name	Hydric Component	Location Notes
TeF	Terrace Escarpments		
Tf	Tidal marsh	Tidal Marsh	
VaE2	Vallecitos loam, 15 to 30 percent slopes, eroded		
Vaf	Vallecitos loam, 30 to 50 percent slopes		
VaG2	Vallecitos loam, 50 to 75 percent slopes, eroded		
Wa	Willows clay	Willows (CA0419)	
Wb	Willows clay, slightly alkali	Willows (CA0419)	
YaA	Yolo loam, 0 to 2 percent slopes		
YaB	Yolo loam, 2 to 5 percent slopes		
YeA	Yolo silty clay loam, 0 to 2 percent slopes		
YeC	Yolo silty clay loam, 2 to 9 percent slopes		
ZbA	Zamora clay loam, 0 to 2 percent slopes		
ZbC	Zamora clay loam, 2 to 9 percent slopes		
ZaA	Zamora loam, 0 to 2 percent slopes		

Hydric Soils in Santa Clara Area

Map Symbol	Soil Name	Hydric Component	Location Notes
ZaC	Zamora loam, 2 to 9 percent slopes		
ZeC3	Zamora and Cropley soils, 2 to 9 percent slopes, severely eroded		

APPENDIX C.

WETLAND DETERMINATION DATA FORMS FOR THE LOWER GUADALUPE RIVER FLOOD CONTROL PROJECT POND A8W

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Sample Number
1

Project/Site: Lower Guadalupe River
Applicant/Owner: Santa Clara Valley Water District
Investigator: M. Bacca, K. Flaig

Date: 12/10/01
County: Santa Clara
State: California

Do Normal Circumstances exist on the site?	[Yes]	No
Is the site significantly disturbed (Atypical Situations?)	Yes	[No]
Is the area a potential Problem Area?	Yes	[No]
(If needed, explain on reverse.)		

Community ID: Remnant Salt Marsh
Transect ID : 1
Plot ID:

VEGETATION

Dominant Plant Species*	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Salicornia virginica**	H	OBL	9.		
2.			10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 1/1 = 100%

Remarks:

HYDROLOGY

Recorded Data (describe in Remarks):

- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- ____ Other
- X No Recorded Data Available

Field Observation:

Depth of Surface Water: --- (in.)

Depth to Free Water in Pit: >12 (in.)

Depth to Saturated Soil >12 (in.)

Wetland Hydrology Indicators:

Primary Indicators:

- ____ Inundated
- ____ Saturated
- ____ Water Marks
- ____ Drift Lines
- X Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):

- X Oxidized Root Channels in Upper 12 in.
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks: Pit is located in a bowl-shaped basin with no obvious drainage outlet; assumed saturation occurs later in rainfall season once numerous storms have occured an clay soil becomes saturated.

SOILS

Sample Number
1

Map Unit Name
(Series and Phase) Made Land

Taxonomy (Subgroup): None

Drainage Class: N/A
Field Observations: N/A
Confirm Mapped Type? [Yes] No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
11	A	10 YR 3/1	7.5 YR 3/4	~5%/bright	clay

Hydric Soil Indicators:

	Histosol		Concretions
	Histic Epipedon		High Organic Content in Surface Layer in Sandy Soils
	Suffidic Odor		Organic Streaking in Sandy Soils
X	Aquic Moisture Regime		Listed on Local Hydric Soils List
X	Reducing Conditions		Listed on National Hydric Soils List
	Gleyed or Low-Chroma colors		Other (Explain in Remarks)

Remarks:
Aquic moisture regime presumed to be seasonal with onset of heavy rains; presence of dense pickleweed suggests that soil is saturated at least seasonally.

WETLAND DETERMINATION

	(Circle)		
Hydrophytic Vegetation Present?	[Yes]	No	(Circle)
Wetland Hydrology Present?	[Yes]	No	
Hydric Soils Present?	[Yes]	No	Is this Sampling Point Within a Wetland? [Yes] No

Remarks:
Sample pit occurs within low-lying pickleweed dominated depression.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Sample Number
2

Project/Site: Lower Guadalupe River
Applicant/Owner: Santa Clara Valley Water District
Investigator: M. Bacca, K. Flaig

Date: 12/10/01
County: Santa Clara
State: California

Do Normal Circumstances exist on the site?	[Yes]	No
Is the site significantly disturbed (Atypical Situations?)	Yes	[No]
Is the area a potential Problem Area?	Yes	[No]
(If needed, explain on reverse.)		

Community ID: Ruderal
Transect ID : 2
Plot ID:

VEGETATION

Dominant Plant Species*	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Picris echioides**	H	FAC	9.		
2. *Bromus diandrus*	H	NI	10.		
3. *Hordeum hystrix*	H	FAC	11.		
4. *Carduus pycnocephalus*	H	NI	12.		
5. *Salicornia virginica*	H	OBL	13.		
6. *Brassica nigra*	H	NI	14.		
7. *Malva sp.*	H	---	15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 3/6 = 50%

Remarks:

HYDROLOGY

Recorded Data (describe in Remarks):

- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- ____ Other
- X No Recorded Data Available

Field Observation:

- Depth of Surface Water: --- (in.)
- Depth to Free Water in Pit: >12 (in.)
- Depth to Saturated Soil >12 (in.)

Wetland Hydrology Indicators:

Primary Indicators:

- ____ Inundated
- ____ Saturated
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):

- X Oxidized Root Channels in Upper 12 in.
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks: Pit is located approximately 30 feet east of Pit 1; elevation slightly higher.

SOILS

Sample Number
2

Map Unit Name
(Series and Phase) Made Land

Taxonomy (Subgroup): None

Drainage Class: N/A
Field Observations: N/A
Confirm Mapped Type? [Yes] No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
12	A	10 YR 4/2	7.5 YR 4/6	>5%/bright	clay

Hydric Soil Indicators:

	Histosol		Concretions
	Histic Epipedon		High Organic Content in Surface Layer in Sandy Soils
	Suffidic Odor		Organic Streaking in Sandy Soils
	Aquic Moisture Regime		Listed on Local Hydric Soils List
X	Reducing Conditions		Listed on National Hydric Soils List
	Gleyed or Low-Chroma colors		Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

	(Circle)	
Hydrophytic Vegetation Present?	Yes	[No]
Wetland Hydrology Present?	Yes	[No]
Hydric Soils Present?	[Yes]	No

(Circle)

Is this Sampling Point Within a Wetland? Yes [No]

Remarks:
Sample point located on gentle slope above pickleweed depression.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Sample Number
3

Project/Site: Lower Guadalupe River
Applicant/Owner: Santa Clara Valley Water District
Investigator: M. Bacca, K. Flaig

Date: 1/8/02
County: Santa Clara
State: California

Do Normal Circumstances exist on the site?	Yes	No
Is the site significantly disturbed (Atypical Situations?)	Yes	No
Is the area a potential Problem Area?	Yes	No
(If needed, explain on reverse.)		

Community ID: Pickleweed Marsh
Transect ID : 3
Plot ID:

VEGETATION

Dominant Plant Species*	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Salicornia virginica**	H	OBL	9.		
2.			10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 1/1 = 100%

Remarks:

HYDROLOGY

Recorded Data (describe in Remarks):

- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- ____ Other
- X No Recorded Data Available

Field Observation:

- Depth of Surface Water: 1-2 (in.)
- Depth to Free Water in Pit: >10 (in.)
- Depth to Saturated Soil 0 (in.)

Wetland Hydrology Indicators:

Primary Indicators:

- X Inundated
- X Saturated
- ____ Water Marks
- X Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):

- ____ Oxidized Root Channels in Upper 12 in.
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks: Sample point located within narrow pickleweed strip adjacent to pond's edge. Surface water drains into pit, filling it within seconds.

SOILS

Sample Number
3

Map Unit Name
(Series and Phase)

Taxonomy (Subgroup):

Drainage Class:
Field Observations:
Confirm Mapped Type? Yes [No]

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-6	A	2.5 YR 4/1	10 YR 4/4	Many/Bright	silty clay
6+	A	2.5 Y 4/1	7.5 YR 3/4	Many/Dark	clay

Hydric Soil Indicators:

	Histosol		Concretions
	Histic Epipedon		High Organic Content in Surface Layer in Sandy Soils
X	Suffidic Odor		Organic Streaking in Sandy Soils
X	Aquic Moisture Regime		Listed on Local Hydric Soils List
X	Reducing Conditions		Listed on National Hydric Soils List
	Gleyed or Low-Chroma colors		Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

	(Circle)		
Hydrophytic Vegetation Present?	[Yes]	No	(Circle)
Wetland Hydrology Present?	[Yes]	No	
Hydric Soils Present?	[Yes]	No	Is this Sampling Point Within a Wetland? [Yes] No

Remarks:
Sample point located on a narrow, pickleweed-dominated flat adjacent to pond's edge.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Sample Number
4

Project/Site: Lower Guadalupe River
Applicant/Owner: Santa Clara Valley Water District
Investigator: M. Bacca, K. Flaig

Date: 1/8/02
County: Santa Clara
State: California

Do Normal Circumstances exist on the site?	[Yes]	No
Is the site significantly disturbed (Atypical Situations?)	Yes	[No]
Is the area a potential Problem Area?	Yes	[No]
(If needed, explain on reverse.)		

Community ID: Ruderal
Transect ID : 4
Plot ID:

VEGETATION

Dominant Plant Species*	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Foeniculum vulgare*	H	FACU	9.		
2. *Baccharis pilularis*	S	NOL	10.		
3. *Bromus diandrus**	H	NI	11.		
4. *Cynodon dactylon*	H	FAC	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 1/4 = 25%

Remarks:

HYDROLOGY

Recorded Data (describe in Remarks):

- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- ____ Other
- X No Recorded Data Available

Field Observation:

- Depth of Surface Water: 0 (in.)
- Depth to Free Water in Pit: >10 (in.)
- Depth to Saturated Soil >10 (in.)

Wetland Hydrology Indicators:

Primary Indicators:

- ____ Inundated
- ____ Saturated
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):

- ____ Oxidized Root Channels in Upper 12 in.
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks: No hydrologic features observed.

SOILS

Sample Number
4

Map Unit Name
(Series and Phase)

Taxonomy (Subgroup):

Drainage Class:
Field Observations:
Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-10+	A	10 YR 3/2	none	N/A	gravelly clay

Hydric Soil Indicators:

	Histosol		Concretions
	Histic Epipedon		High Organic Content in Surface Layer in Sandy Soils
	Suffidic Odor		Organic Streaking in Sandy Soils
	Aquic Moisture Regime		Listed on Local Hydric Soils List
	Reducing Conditions		Listed on National Hydric Soils List
	Gleyed or Low-Chroma colors		Other (Explain in Remarks)

Remarks:
Sample point occus on levee slope; fill material present.

WETLAND DETERMINATION

	(Circle)	
Hydrophytic Vegetation Present?	Yes	No
Wetland Hydrology Present?	Yes	No
Hydric Soils Present?	Yes	No

(Circle)

Is this Sampling Point Within a Wetland? Yes No

Remarks:
Sample point along levee slope dominated by upland species and lacking hydric soils and wetland hydrology.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Sample Number
5

Project/Site: Lower Guadalupe River
Applicant/Owner: Santa Clara Valley Water District
Investigator: M. Bacca, K. Flaig

Date: 1/8/02
County: Santa Clara
State: California

Do Normal Circumstances exist on the site?	[Yes]	No
Is the site significantly disturbed (Atypical Situations?)	Yes	[No]
Is the area a potential Problem Area?	Yes	[No]
(If needed, explain on reverse.)		

Community ID: Pickleweed Marsh
Transect ID : 5
Plot ID:

VEGETATION

Dominant Plant Species*	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Salicornia virginica**	H	OBL	9.		
2.			10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 1/1 = 100%

Remarks:

HYDROLOGY

Recorded Data (describe in Remarks):

- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- ____ Other
- X No Recorded Data Available

Field Observation:

- Depth of Surface Water: 4 (in.)
- Depth to Free Water in Pit: 0 (in.)
- Depth to Saturated Soil 0 (in.)

Wetland Hydrology Indicators:

Primary Indicators:

- X Inundated
- X Saturated
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):

- ____ Oxidized Root Channels in Upper 12 in.
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks: Sample point located on broad pickleweed flat in line with pond's water.

SOILS

Sample Number
5

Map Unit Name
(Series and Phase)

Taxonomy (Subgroup):

Drainage Class:
Field Observations:
Confirm Mapped Type? Yes [No]

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-5		N/A	none	N/A	coarse sand
5-10+		3/10 Y	none	N/A	clay

Hydric Soil Indicators:

	Histosol		Concretions
	Histic Epipedon		High Organic Content in Surface Layer in Sandy Soils
X	Suffidic Odor		Organic Streaking in Sandy Soils
X	Aquic Moisture Regime		Listed on Local Hydric Soils List
	Reducing Conditions		Listed on National Hydric Soils List
X	Gleyed or Low-Chroma colors		Other (Explain in Remarks)

Remarks:

WETLAND DETERMINATION

	(Circle)	
Hydrophytic Vegetation Present?	[Yes]	No
Wetland Hydrology Present?	[Yes]	No
Hydric Soils Present?	[Yes]	No

(Circle)

Is this Sampling Point Within a Wetland? [Yes] No

Remarks:
Sample point located on broad, pickleweed-dominated flat adjacent to pond's edge.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Sample Number
6

Project/Site: Lower Guadalupe River
Applicant/Owner: Santa Clara Valley Water District
Investigator: M. Bacca, K. Flaig

Date: 1/8/02
County: Santa Clara
State: California

Do Normal Circumstances exist on the site?	[Yes]	No
Is the site significantly disturbed (Atypical Situations?)	Yes	[No]
Is the area a potential Problem Area?	Yes	[No]
(If needed, explain on reverse.)		

Community ID: Ruderal
Transect ID : 6
Plot ID:

VEGETATION

Dominant Plant Species*	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Foeniculum vulgare*	H	FACU	9.		
2. *Dittrichia graveolens*	H	NOL	10.		
3. *Bromus diandrus**	H	NI	11.		
4. *Piptatherum miliaceum*	H	NOL	12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 0/4 = 0%

Remarks:

HYDROLOGY

Recorded Data (describe in Remarks):

- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- ____ Other
- X No Recorded Data Available

Field Observation:

- Depth of Surface Water: --- (in.)
- Depth to Free Water in Pit: >12 (in.)
- Depth to Saturated Soil >12 (in.)

Wetland Hydrology Indicators:

Primary Indicators:

- ____ Inundated
- ____ Saturated
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):

- ____ Oxidized Root Channels in Upper 12 in.
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks: No hydrologic indicators observed.

SOILS

Sample Number
6

Map Unit Name
(Series and Phase)

Drainage Class:
Field Observations:

Taxonomy (Subgroup):

Confirm Mapped Type? Yes No

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
12	A	10 YR 3/2	none	N/A	gravelly clay

Hydric Soil Indicators:

	Histosol		Concretions
	Histic Epipedon		High Organic Content in Surface Layer in Sandy Soils
	Suffidic Odor		Organic Streaking in Sandy Soils
	Aquic Moisture Regime		Listed on Local Hydric Soils List
	Reducing Conditions		Listed on National Hydric Soils List
	Gleyed or Low-Chroma colors		Other (Explain in Remarks)

Remarks:
Sample point along levee slope; fill material present.

WETLAND DETERMINATION

	(Circle)	
Hydrophytic Vegetation Present?	Yes	No
Wetland Hydrology Present?	Yes	No
Hydric Soils Present?	Yes	No

(Circle)

Is this Sampling Point Within a Wetland? Yes No

Remarks:
Sample pit located along levee slope dominated by upland vegetation. Lack of hydric soils and wetland hydrology.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Sample Number
7

Project/Site: Lower Guadalupe River
Applicant/Owner: Santa Clara Valley Water District
Investigator: M. Bacca, K. Flaig

Date: 1/8/02
County: Santa Clara
State: California

Do Normal Circumstances exist on the site? [Yes] No

Is the site significantly disturbed (Atypical Situations?) Yes [No]

Is the area a potential Problem Area? Yes [No]

(If needed, explain on reverse.)

Community ID: Pickleweed Marsh

Transect ID : 7

Plot ID:

VEGETATION

Dominant Plant Species*	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Salicornia virginica**	H	OBL	9.		
2.			10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 1/1 = 100%

Remarks:

HYDROLOGY

Recorded Data (describe in Remarks):

___ Stream, Lake, or Tide Gauge
___ Aerial Photographs
___ Other
X No Recorded Data Available

Field Observation:

Depth of Surface Water: --- (in.)

Depth to Free Water in Pit: >10 (in.)

Depth to Saturated Soil 6 (in.)

Wetland Hydrology Indicators:

Primary Indicators:

___ Inundated
X Saturated
___ Water Marks
X Drift Lines
___ Sediment Deposits
___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):

___ Oxidized Root Channels in Upper 12 in.
___ Water-Stained Leaves
___ Local Soil Survey Data
___ FAC-Neutral Test
___ Other (Explain in Remarks)

Remarks: Pit located within 5 feet of water in pond.

SOILS

Sample Number
7

Map Unit Name
(Series and Phase)

Drainage Class:
Field Observations:

Taxonomy (Subgroup):

Confirm Mapped Type? Yes [No]

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottie Abundance/Contrast	Texture, Concretions, Structure, etc.
0-6		N/A	none	N/A	sandy
6-10+		2.5 Y 4/3	none	N/A	coarse sandy loam

Hydric Soil Indicators:

	Histosol		Concretions
	Histic Epipedon		High Organic Content in Surface Layer in Sandy Soils
	Suffidic Odor		Organic Streaking in Sandy Soils
X	Aquic Moisture Regime		Listed on Local Hydric Soils List
	Reducing Conditions		Listed on National Hydric Soils List
	Gleyed or Low-Chroma colors		Other (Explain in Remarks)

Remarks:
Coarse-textured fill soil has not been in place long enough to develop reducing conditions or such conditions are difficulty to see in coarse texture. Scant vegetation makes organic matter streaking/build-up scarce.

WETLAND DETERMINATION

	(Circle)		
Hydrophytic Vegetation Present?	[Yes]	No	(Circle)
Wetland Hydrology Present?	[Yes]	No	
Hydric Soils Present?	[Yes]	No	Is this Sampling Point Within a Wetland? [Yes] No

Remarks:
Sample point occurs within narrow, pickleweed-dominated strip at water's edge.

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Sample Number
8

Project/Site: Lower Guadalupe River
Applicant/Owner: Santa Clara Valley Water District
Investigator: M. Bacca, K. Flaig

Date: 1/8/02
County: Santa Clara
State: California

Do Normal Circumstances exist on the site?	Yes	No
Is the site significantly disturbed (Atypical Situations?)	Yes	No
Is the area a potential Problem Area?	Yes	No
(If needed, explain on reverse.)		

Community ID: Ruderal
Transect ID : 8
Plot ID:

VEGETATION

Dominant Plant Species*	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1. *Piptatherum miliaceum*	H	NOL	9.		
2. *Baccharis pilularis*	S	NOL	10.		
3. *Bromus diandrus**	H	NI	11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). 0/3 = 0%

Remarks:

HYDROLOGY

Recorded Data (describe in Remarks):

- ____ Stream, Lake, or Tide Gauge
- ____ Aerial Photographs
- ____ Other
- X No Recorded Data Available

Field Observation:

- Depth of Surface Water: --- (in.)
- Depth to Free Water in Pit: >10 (in.)
- Depth to Saturated Soil: >10 (in.)

Wetland Hydrology Indicators:

Primary Indicators:

- ____ Inundated
- ____ Saturated
- ____ Water Marks
- ____ Drift Lines
- ____ Sediment Deposits
- ____ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):

- ____ Oxidized Root Channels in Upper 12 in.
- ____ Water-Stained Leaves
- ____ Local Soil Survey Data
- ____ FAC-Neutral Test
- ____ Other (Explain in Remarks)

Remarks: No hydrologic indicators observed.

SOILS

Sample Number
8

Map Unit Name
(Series and Phase)

Drainage Class:
Field Observations:

Taxonomy (Subgroup):

Confirm Mapped Type? Yes [No]

Profile Description:

Depth (inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Colors (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure, etc.
0-10+	A	10 YR 3/2	none	N/A	clay

Hydric Soil Indicators:

	Histosol		Concretions
	Histic Epipedon		High Organic Content in Surface Layer in Sandy Soils
	Suffidic Odor		Organic Streaking in Sandy Soils
	Aquic Moisture Regime		Listed on Local Hydric Soils List
	Reducing Conditions		Listed on National Hydric Soils List
	Gleyed or Low-Chroma colors		Other (Explain in Remarks)

Remarks:
Pit along slope of built-up levee; fill material present.

WETLAND DETERMINATION

	(Circle)		
Hydrophytic Vegetation Present?	Yes	[No]	(Circle)
Wetland Hydrology Present?	Yes	[No]	
Hydric Soils Present?	Yes	[No]	Is this Sampling Point Within a Wetland? Yes [No]

Remarks:
Sample point located approximately 10 feet above SP 8, along levee slope.

APPENDIX D.

PHOTOGRAPHS OF THE LOWER GUADALUPE RIVER FLOOD CONTROL PROJECT POND A8W

Photograph 1: Northern portion of project site depicting broad, depressional area that supports isolated ponding and a dense pickleweed area. Note large dumping area of construction debris in background.

Photograph 2: Ponded conditions within northern depressional area; view is to the south. This area is described as a Section 404 other water.

Photograph 3: Southeastern perimeter of Pond A8W; view is to the north. Note the abundance of concrete debris along the levee.

Photograph 4: Example of pickleweed dominated wetland located along the toe of the levee.

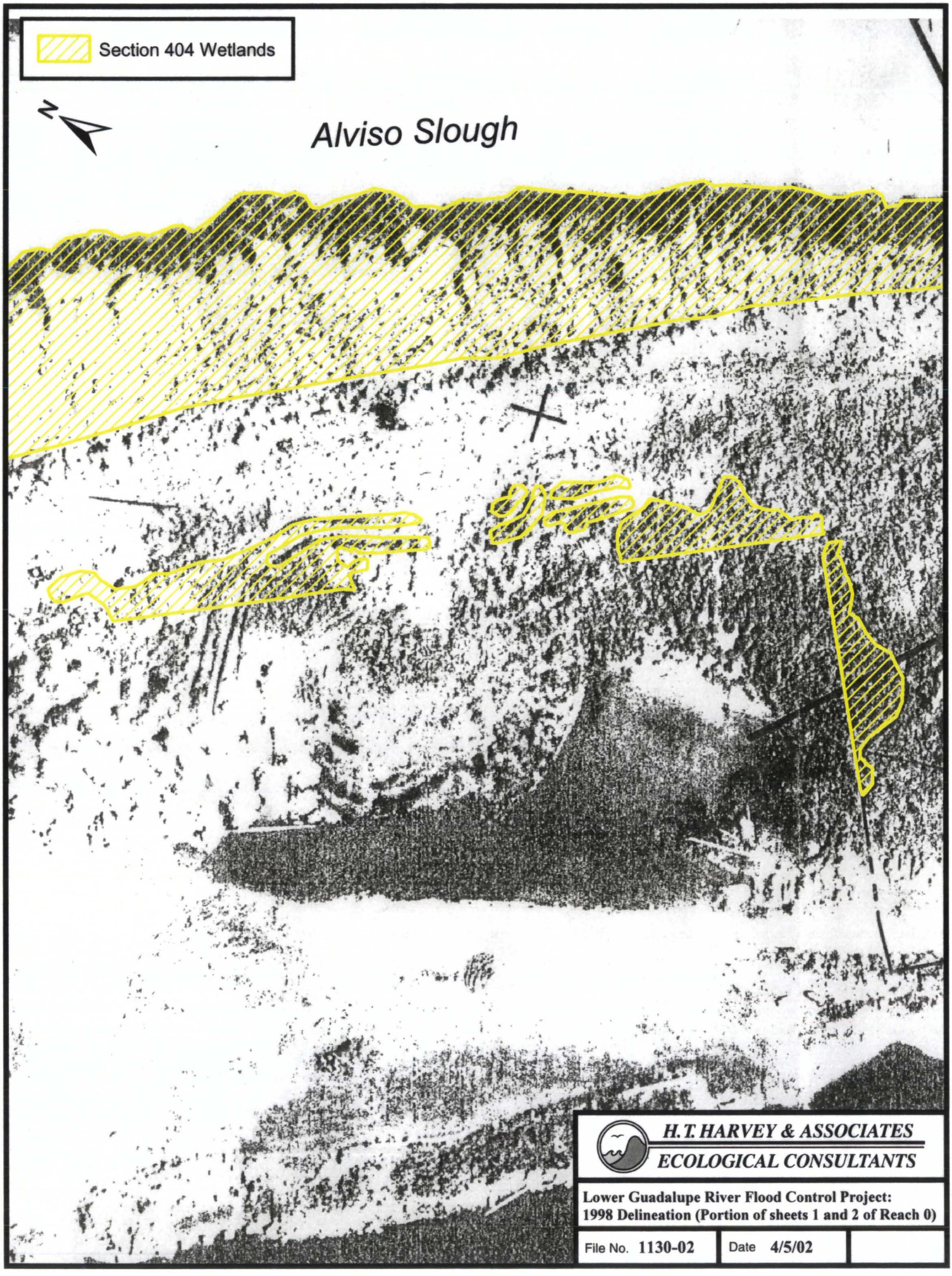
Photograph 5: Example of a narrow band of pickleweed wetland along the toe of the levee. Note the steepness of the levee bank which limits the width of the wetland.

Photograph 6: Section 404 and Section Historic 10 other water directly linked to Pond A8W. A very shallow shelf, depicting the OHW mark, occurs at the limit of the water's edge.

Photograph 7: Example of an area described as an upland due to the lack of hydric soil and wetland hydrology features. The scattered pickleweed plants are present due to the relatively high salinity within the soils.

APPENDIX E.

1997 LOWER GUADALUPE RIVER DELINEATION (PORTIONS OF SHEETS 1 AND 2 OF REACH 0)



H.T. HARVEY & ASSOCIATES
ECOLOGICAL CONSULTANTS

Lower Guadalupe River Flood Control Project:
1998 Delineation (Portion of sheets 1 and 2 of Reach 0)

File No. **1130-02** | Date **4/5/02**